

**REMARKS**

**I. Status of the Claims**

The Office Action indicates that claims 1-17 are pending in the application and that claims 1, 3, 5-15 and 17 are rejected and claims 2, 4, and 16 are withdrawn from consideration. However, claim 16 was canceled in the Amendment filed October 18, 2005. Therefore, for the record, claims 1-15 and 17 are pending in the application. We will point this out to the Examiner in the next Action for the record.

Claims 1, 3, 9, 14, 15 and 17 are amended, claims 2 and 4-8 are canceled and new claim 18 is added herein. Support is found, for example, at page 2, line 33 to page 3, line 4; page 11, lines 6-19; page 16, lines 10-15; and page 50, lines 7-28, and in the original claims. No new matter is presented.

Upon entry of the Amendment, claims 1, 3, 9-15 and 17-18 will be all of the claims pending in the application.

**II. Priority Documents**

The Examiner has not acknowledged Applicants' claim for foreign priority or receipt of the certified copies of the priority documents from the International Bureau. However, the certified copies of the priority documents are present in the Image File Wrapper (IFW) of the application on the PTO's PAIR website. The Examiner is requested to formally acknowledge receipt of the certified copies of the priority documents in the next Action for the record.

### **III. Response to Claim Objections**

Claims 1, 3, 5-15 and 17 are objected to as containing non-elected subject matter. In addition, the Examiner asserts that the term “substituents” should be phrased “one or more substituents”.

The claims are amended herein to delete non-elected subject matter and the term “substituents” is replaced with “one or more substituents” to appease the Examiner.

Accordingly, Applicants respectfully request withdrawal of the objection to the claims.

### **III. Response to Claim Rejections under 35 U.S.C. § 112, 1<sup>st</sup> Paragraph – Written Description**

Claims 1, 3, 5-15 and 17 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

(1). The Examiner states that the core of the molecule of formula (I) in claim 1 is difficult to determine because of the definitions of variables A, B, G, J, K and D.

The subject matter of the claims has been limited to elected Group II, thereby obviating this aspect of the rejection.

(2). The Examiner states that the claims contain generic definitions for one or more of the variables in each of the claims.

The subject matter of the claims has been limited to elected Group II, thereby obviating this aspect of the rejection.

(3). At page 4 of the Action, the Examiner makes the statement that the case was filed before Applicants had a clear idea of the structure encompassing the scope of claims 1-2 and 19-

22, other than the specific compounds recited in claims 11 and 12. However, this statement does not appear to relate to the present application as claims 1-15 and 17 are pending and claims 11 and 12 are directed to compositions and not specific compounds of the invention. Therefore, Applicants respectfully request clarification of this matter for the record.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, 1<sup>st</sup> paragraph, for lack of written description.

**IV. Response to Claim Rejections under 35 U.S.C. § 112, 1<sup>st</sup> Paragraph – Enablement**

(1). Claims 1, 3, 5-15 and 17 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for a salt or N-oxide of a compound of formula (I), allegedly does not reasonably provide enablement for a solvate or prodrug of a compound of formula (I). The Examiner also states that Applicants do not make any complex compositions comprising a compound of formula (I) and any of the active ingredients recited in claim 17.

The claims are amended herein by deleting references to “solvates” or “prodrugs”, thereby obviating this aspect of the rejection.

(2). Claims 14 and 15 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

The Examiner asserts that the claims are not enabled for the simultaneous treatment and prevention of a chemokine receptor related disease. The Examiner specifically states that if a subject already has a disease, they can only be treated for the disease and if a subject does not have a disease, a drug can only prevent a disease such as by use of a vaccine.

The Examiner also asserts that HIV<sup>1</sup> is one disease that is induced by chemokine receptors and this disease can not be prevented or treated by the administration of a single drug.

Claims 13, 14 and 15 are amended herein by deleting the phrase “prevention and/or”, thereby obviating this aspect of the rejection.

Claim 15 is amended to recite a method of treatment of specific diseases and conditions. Each of the diseases recited in amended claim 15 is supported and enabled by the specification as filed particularly in view of the knowledge and skill in the art and the guidance provided in the specification. Specifically, the claimed compounds are shown to have chemokine CCR1 and/or CCR5 receptor antagonistic activity. The following literature references are submitted herewith which show an established relationship between chemokine (CCR1, CCR5) and the diseases and conditions recited in amended claim 15.

No.	Disease	Journal
1	Arthritis	Arthritis & Rheumatism, 2005, 52: 627-636
2	Rheumatoid arthritis	Ann. Rheum. Dis, 2005, 64: 487-490
3	Rheumatoid arthritis	Ann. Rheum. Dis, 2003, 62: 715-721
4	Psoriasis	Nat. Med., 2003, 9: 40-46
5	Multiple sclerosis	J. Immunol., 1995, 155: 5003-5010
6	Multiple sclerosis	Proc. Natl. Acad. Sci. USA, 1999, 96: 6873-6878.
7	Multiple sclerosis	Eur. J. Immunol., 2000, 30: 2372-2377
8	Multiple sclerosis	Neurogenetics, 2007, 8: 201-205
9	Ulcerative colitis	Int. Immunol., 2005, 17: 1023-1034
10	Allergic bronchopulmonary aspergillosis	FASEB. 2002, 16: 228-230
11	Allergic bronchopulmonary aspergillosis	Br. J. Pharmacol., 2005, 145: 1160-1172

<sup>1</sup> Applicants believe that the word “HIV” was inadvertently omitted in the Action by the Examiner.

No.	Disease	Journal
12	Asthma	Lancet, 1999, 354: 1264-1265
13	Atopic dermatitis	Proc. Natl. Acad. Sci. USA, 2006, 103: 8816-8821
14	Urticaria	Int Arch Allergy Immunol, 2002, 128: 59-66
15	Acquired immunodeficiency syndrome	J. Virol., 2005, 2087-2096
16	Cancer metastasis	Cancer Res., 2005, 65: 3374-3379
17	Acute respiratory distress syndrome	Am J Respir Crit Care Med, 1996, 154: 602-611
18	Shock accompanying bacteria infection	Infect. Immun., 1998, 66: 3569-3578
19	Shock accompanying bacteria infection	Am J Physiol Gastrointest Liver Physiol, 2007, 292: G1173-1180
20	Conjunctivitis	Arch Ophthalmol., 2006, 124: 710-716.
21	Ischemic reperfusion injury	Transplant. Proc., 2006, 38: 3366-3368
22	Nephritis	Am J Nephrol, 2000, 20: 291-299.
23	Nephritis	J Am Soc Nephrol. 2004, 15: 1504-1513.
24	Nephropathy	Kidney Int., 2005, 67: 75-81.
25	Nephropathy	J Am Soc Nephrol, 2005, 16: 977-985
26	Hepatitis	Gut., 2005, 54: 1157-1161
27	Rhinitis	J Investig Allergol Clin Immunol, 2007, 17: 329-336
28	Diabetes	Eur. J. Immunol., 2004, 34: 548-557.
29	Organ rejection in transplantation	J. Immunol., 2007, 179: 2289-2299
30	Organ rejection in transplantation	J. Biol. Chem., 2001, 276: 4199-4204
31	Uveitis	J. Autoimmun., 2002, 18: 259-270

Additionally, with respect to the Examiner's comments regarding use of the compounds for the treatment of HIV, Applicants note that as discussed in the specification at page 4, lines 7-30, it is accepted in the art that CXCR4 or CCR5 antagonist activity can result in HIV infection inhibition. The compound of Example 1 of the invention is confirmed to have CCR5

antagonistic activity based on the experiments described at pages 88-90 of the specification and one of ordinary skill in the art would be able to reasonably extrapolate the *in vitro* data to *in vivo* use. Thus, the treatment of HIV is enabled by the specification. The fact that HIV is treated with multiple drugs does not mean that the claimed compounds can not be used in the treatment of HIV as claimed.

Thus, reconsideration of the rejection in view of the literature references submitted herewith is respectfully requested.

In view of the above, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112, 1<sup>st</sup> paragraph, for lack of enablement.

**V. Response to Claim Rejections under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph**

In paragraph 8 of the Office Action, claims 1, 3, 5-15 and 17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner asserts that it is not clear what substituents are attached to the variables in the claims. The Examiner further asserts that the specification does not provide guidance for the substituents of the variables.

The Examiner's focus in determining whether the claims are in compliance with 35 U.S.C. § 112, second paragraph should be whether the claims set out the claimed subject matter with a reasonable degree of clarity and particularity in light of (1) the content of the specification; (2) the teachings of the prior art; and (3) the claim interpretation that would be given by one of ordinary skill in the art.

In this regard, the specification describes exemplary substituent groups for each of the recited variables. For example, the substituents R<sup>1</sup>, A, B, G, J, K and D, are disclosed at page 8, line 10 to page 16, line 7, and there are several exemplary compounds in the specification. Also,

the subject matter of claim 17 is disclosed at page 50, line 33 to page 54, line 18. Additionally, claims 1 and 9 are amended to further define the substituents for the R<sup>1</sup> variable. Thus, when properly read in light of the specification, one of ordinary skill in the art would be able to readily ascertain the meaning and scope of the present claims.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph.

#### **VI. Incorporation by Reference**

In paragraphs 9 and 10 of the Action, the Examiner asserts that Applicants' attempt to incorporate the subject matter by reference to multiple foreign documents for CCR antagonists is ineffective because foreign documents can not be incorporated by reference for the explanation of essential subject matter.

Applicants respectfully submit that the description at pages 51-52 of the specification includes examples of CCR antagonists known in the art. One of ordinary skill in the art would easily understand the meanings of the CCR antagonists without relying on the publications described at pages 51-52.

Accordingly, Applicants respectfully request reconsideration.

#### **VII. Response to Claim Rejections under 35 U.S.C. §102**

##### **A. Suzuki et al (WO 02/28880)**

Claims 1, 3 and 5-8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Suzuki et al (WO 02/28880, published April 11, 2002). The Examiner states that compounds 53 and 54 at page 52 of formula (I-7) anticipate the present claims.

Claim 1 is amended to recite specific substituents for piperidine ring A which do not include the oxo groups of compounds 53 and 54 of the reference as supported by the specification at page 11, lines 6-20. Suzuki et al does not disclose, teach or suggest a compound within the scope of formula (I) as recited in amended claim 1.

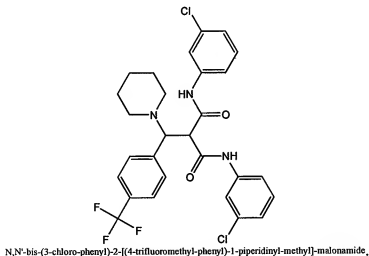
Accordingly, Applicants respectfully request withdrawal of the anticipation rejection.

**B. Cai et al (US 2007/00443076)**

Claims 1, 3 and 5-14 are rejected under 35 U.S.C. § 102(e) as being anticipated by Cai et al (US 2007/00443076, published February 27, 2007, priority to 60/508,290, October 6, 2003).

Applicants respectfully traverse the rejection.

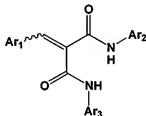
Compound 86 of Cai et al does not anticipate the present claims. Applicants submit that the Examiner's characterization of compound 86 is incorrect. Compound 86 of Cai et al has the following structure:



Thus, the present claims are not anticipated at least because in the compounds of formula (I) of the present invention, ring A and ring B are linked by a bond, whereas the piperidine ring of compound 86 of Cai et al is not linked to a phenyl ring by a bond. Applicants further submit



that it does not appear that there is a compound disclosed within the reference that anticipates the present compounds of formula (I). The compound of Example 74 in Cai et al ( $R^1$ -A:4-methyl-piperidine, B: phenyl, G:  $CH=C(C(O)NH-3-CF_3\text{-phenyl})$ , J:  $C(O)NH$ , D: 3- $CF_3$ -phenyl), appears to be close but differs at least at the position corresponding to G. Specifically, G in the compound of the present invention has an alkylene group, whereas the compound of formula (I) shown below in Cai et al has an alkenylene group at the position corresponding to G in the compound of the present invention.



In view of the above, Cai et al does not anticipate the present claims.

Accordingly, Applicants respectfully request withdrawal of the anticipation rejection.

#### **IX. Response to Claim Rejections under 35 U.S.C. §103**

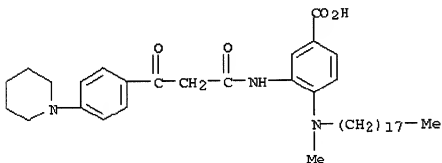
##### **A. Corby et al (GB 805503)**

In paragraph 16 of the Office Action, claims 1, 3 and 5-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Corby et al (GB 805,503, published December 10, 1958).

The Examiner relies on the structure below as the compound made in Example 13 of Corby et al having registry number 103402-24-0.<sup>2</sup> The Examiner states that A is piperidine, B is

<sup>2</sup> This structure is shown on page 5 of the Examiner's search strategy and results in the Image File Wrapper (IFW) for this application on the U.S. PTO's PAIR website.

phenyl, G is C(O)CH<sub>2</sub>, J is NHC(O) and D is dimethylamino-4-CO<sub>2</sub>H-phenyl. The Examiner further states that the difference between the claimed compounds and the compound of Example 13 of Corby et al is that the compound of Corby et al does not include an alkyl group attached to ring A. The Examiner cites case law stating that when a compound closely related to a prior art compound as to be structurally obvious is sought to be patented based on alleged greater effectiveness of the new compound for the same purpose as the old compound, clear and convincing evidence of substantially greater effectiveness is needed.



Applicants respectfully traverse the rejection and submit that the Examiner has not made a *prima facie* showing of obviousness. Specifically, the compound of Corby et al differs from the present compounds at R<sup>1</sup>, G and J.

In the compound of the present invention, the ring A has R<sup>1</sup> as the substituent, and as a result, CCR1 and/or CCR5 antagonistic activity can be obtained. One of ordinary skill in the art would not easily expect this CCR1 and/or CCR5 antagonistic effect in the present invention based on the disclosure of the Corbey et al.

Additionally, the compounds of Corby et al are taught to be useful color couplers for photography which is entirely different from the use of the compounds having CCR1 and/or CCR5 antagonistic activity.

Also, there is no apparent reason to modify the compounds disclosed by Corby et al with a reasonable expectation of success in achieving the presently claimed compounds. The Examiner's reliance on case law is misplaced as the compounds are not closely related structurally and do not have the same or similar use or purpose. Thus, the present invention is not rendered obvious by Corbey et al.

Accordingly, Applicants respectfully request withdrawal of the rejection.

#### **X. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: September 5, 2008